Common Skin Disorders Seen in the Migrant Farmworker Health Care Clinic Setting

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Abstract:

Background: Skin diseases are common occupational illnesses for farmworkers. Migrant farmworkers commonly access rural health clinics for diagnosis and treatment of skin disease.
Purpose: To assess common skin conditions of migrant farmworkers treated in rural clinics and to describe effective and economic management of these conditions.
Methods: Seventy-nine farmworkers with a skin condition were seen as patients at 4 clinics in eastern North Carolina. A list of the most common conditions encountered was compiled and treatment methods were found in the literature.
Results: Twenty-three common conditions were identified. The most common conditions were contact dermatitis, melasma, tinea, seborrheic keratoses, and impetigo. A table of treatment recommendations was composed that can be used by clinicians in this setting.
Conclusions: Generally, the most common skin conditions seen in the migrant farmworker population in eastern North Carolina are similar to conditions found in the general population.
Keywords: Skin disease, primary care, rural, underserved, treatment

Article:

INTRODUCTION

Skin disease among migrant farmworkers is a common health problem, as with the general population.[1,2] However, other factors complicate the dermatologic situation for these farmworkers. Migrant farmworkers have exposures to chemicals, wild plants, organic and inorganic dust, and fungi with which most of the general population will not be in contact.[3] Such additional exposures can result in diverse skin problems. Furthermore, language barriers may present an obstacle to accessing health services. Migrant farmworkers also live in unhygienic conditions and have limited access to health services resulting from low income and lack of health insurance.[4–6] Finally, few specialty physicians serve this population, making access to specialized dermatologic expertise problematic.

In light of the factors complicating the health care situation of these workers, the purpose was to assess the most common skin conditions of patients treated in the migrant worker health care clinic setting and to provide basic information on the management of these conditions. These treatment suggestions can provide practitioners and patients with simple and cost-effective measures to aid in treatment of these skin conditions.

METHODS

The project employed teledermatology methods among a sample of migrant clinic patients during the 2006 agricultural season to focus on medically diagnosed occupational skin diseases, their severity, and skin-related quality of life.

Sample
Recruitment was conducted in 4 community/ migrant clinics in eastern North Carolina. To be recruited in the study, the participant had to be (1) currently employed as a hired laborer in farm work (this season), (2) 18 years of age or older, and (3) presenting at the clinic with a primary or secondary diagnosis of a skin disease (the skin disease did not need to be the patient's primary complaint). The total sample included 79 farmworkers (53 men and 26 women).

Data Collection
Patient data included a questionnaire, patient information form, photographs of the affected area(s), and a dermatologist consult. After the patient information form and photographs were posted to a secure server by clinic staff, 1 of 2 board-certified dermatologists reviewed the information and then posted his consult to the same secure server. The providers reviewed the consults and tried to contact participants if changes to the diagnoses and/or treatments were necessary. Participants received a cash incentive of $20. Data collection procedures were approved by the Wake Forest University School of Medicine Institutional Review Board. Treatment options were collected using the PubMed and Google search engines and dermatology textbooks. In 2 cases, the treatment for the condition was so basic a personal recommendation was made by one of the authors (MRH). In another case, the condition was nonspecific and again a personal recommendation was made. Cost of medications was determined using Wal-Mart, Target, and drugstore.com web sites.

Data Interpretation
The 23 most common diagnoses were compiled. Diagnoses that were considered similar by a board-certified dermatologist were grouped together, and the appropriateness of the groupings was reviewed by a second dermatologist. Groupings included dermatitis (contact dermatitis, eczema, and dermatitis), tinea (tinea pedis and other tinea), seborrheic keratosis (skin tags and benign keratoses), and impetigo (bullous impetigo and nonbullous impetigo). Treatment suggestions were also compiled and reference to cost of medications was noted if possible. Costs were determined using drugstore.com and Wal-Mart's and Target's $4 prescription lists.

RESULTS
Ninety-eight diagnoses were made, which were then condensed into 23 diagnostic categories. One hundred thirty-three treatments were given, including treatments that were repeated.

The most common conditions were infectious and inflammatory diseases, such as contact dermatitis (including eczema, dermatitis, and contact dermatitis, 33%), melasma (12.7%), tinea (defined as any dermatophytosis except onychomycosis, 12.7%), seborrheic keratoses (6.3%), and impetigo (including both bullous and nonbullous impetigo, 5%). Treatment recommendations based on the literature (when readily available) as well as cost of individual medications are presented for the observed conditions (Table 1).

DISCUSSION
The most common dermatologic conditions encountered in the migrant farmworker clinics that were sampled include contact dermatitis, melasma, tinea, seborrheic keratoses, and impetigo. In a representative sampling of visits to family physicians in the United States, the most commonly diagnosed dermatologic conditions were quite similar and included dermatitis, pyoderma, wart, tinea infection, and epidermoid cyst.[7] Some diagnoses in this study likely showed overlap with diagnostic terms used by the family physicians in the referenced report. One would expect that the dermatologic conditions with which migrant farmworkers present would tend to be acute disorders, such as those causing pain or pruritus, limiting the patient's ability to work. However, the data indicate that this is not necessarily the case. Many of the observed skin problems were relatively banal, chronic conditions, seen in patients who presented for other reasons.

Certain conditions seen in the migrant farmworkers are self-limiting if the patient does not exacerbate the condition. In an effort to self-treat, sometimes the patient can make the condition more severe.[8] Latino farmworkers have been reported to self-treat with bleach, alcohol, garlic, lemon juice, salt water, and scratching

the lesion and then applying a medicine such as cornstarch.[9] These may cause superimposed irritant reactions that may complicate the presentation and treatment of the underlying skin disorder.

In this report, recommendations were developed for managing the common skin disorders seen in the rural health care clinic setting. Most management recommendations for these skin conditions were found in journal articles or textbooks. However, some conditions did not seem to lend themselves to specific regimens that would be readily found in the literature and were thus designated. Most of the medications recommended are generic and some can be purchased at specific pharmacies which offer a discounted rate on select prescriptions. Where inexpensive alternatives are not available, the expected cost was listed, which will allow the provider to better counsel the patient.

One limitation of this study is the relatively small number of participants. While the number is likely not sufficient to define the entire range of skin problems seen, it is adequate for identifying the common presenting cutaneous conditions. Another limitation is that treatment suggestions often vary between different providers and the suggestions reported herein are not the only way to treat the conditions. Moreover, using only 3 sources to list costs does not provide the complete range of what medications might cost.

This study provided insight into the common dermatologic conditions found in migrant farmworkers. Despite the different exposures such workers may experience compared to much of the general population, it was noted that many of the same types of conditions were encountered in a medical clinic. However, the economics of practicing in such a setting differ as some patients may lack insurance. A table has been included of treatment regimens and prices of medications that will hopefully benefit the practitioners and the farmworkers in this setting.

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TABLE 1. Common Skin Conditions, their Management, and Cost of Medications[a]

	Medications	Recommendations	Cost
Acanthosis nigricans	0.05% Tretinoin cream, 12% ammonium-lactate cream[b]	Type 1: May be associated with adenocarcinoma of the gastrointestinal tract and genitourinary tract, carcinomas of the bile duct, kidney, liver, bladder, thyroid.[b] Screening questions for these can be considered. Type 3: Associated with endocrinopathies such as diabetes mellitus and screening questions should be considered. Weight loss and glucose control can help. Tretinoin 0.05% cream or 12% ammonium lactate cream can be used topically.[b]	Amlactin 12% lotion: $14.99 for 8 oz; Tretinoin 0.05% cream: $45.14 for 20 g
Acne	Topical: Benzoyl peroxide, clindamycin, salicylic acid, retinoids, erythromycin, azelaic acid[c] Systemic: minocycline, doxycycline, tetracycline, erythromycin, trimethoprim-sulfamethoxazole	Mild (variable number of comedones): salicylic acid, azeleic acid, benzoyl peroxide (can bleach clothing), clindamycin phosphate Mild or moderate (variable number of comedones, papules, and/or pustules): Benzoyl peroxide gel, tretinoin. Tretinoin can be applied every other night and if irritation is not problematic can be increased to nightly after 2 to 3 weeks. Moderate or severe: Tetracycline: start at 250 mg 4 times daily or 500 twice daily. Once improved decrease to 250 mg or 500 mg daily or discontinue. Not to be used in children or pregnant women; take on empty stomach. Minocycline: Start at 50 mg and then increase slowly up to 100 mg twice daily. Can cause blue discoloration, nausea, vomiting, headache, visual disturbances, diplopia, pulsatile tinnitus. Doxycycline: Use in similar doses and fashion to minocycline. Photosensitivity seen with use of this drug.[e]	Salicylic acid 2% wash: $6.59 for 6 oz; tretinoin 0.025% cream: $35.09 for 20 g; 10% benzoyl peroxide wash: $4.80 for 6 oz; clindamycin phosphate 1% solution: $13.99 for 30 mL; tetracycline HCl 500 mg: $4 for 60; doxycycline hyclate 100 mg: $4 for 20; minocycline HCl 100 mg: $23 for 30
Atypical nevus		Consider biopsy or excision if a recent change is noted in a pigmented lesion.[f]	
Cellulitis	Cephalexin, dicloxacillin, doxycycline, minocycline, clindamycin, trimethoprim-sulfamethoxazole[g]	Methicillin-sensitive *Staphylococcus aureus*/skin and soft tissue infection: Dicloxicillin 500 mg 4 times daily; cephalexin 500 mg 4 times daily; clindamycin 300 to 450 mg 4 times daily; trimethoprim-sulfamethoxazole 1 to 2 double strength tablets twice daily; doxycycline or minocycline 100 mg twice daily Methicillin-resistant *Staphylococcus aureus*/skin and soft tissue infection: Clindamycin 300 to 450 mg 3 times daily; trimethoprim-sulfamethoxazole 1 to 2 double strength tablets twice daily; doxycycline or minocycline 100 mg 2 times daily Author note: If systemic signs present, may need hospital admission with IV antibiotics.[g] Culture from bullae or an abscess can be helpful.[h]	Dicloxicillin sodium 500 mg: $18.99 for 30; cephalexin 500 mg: $4 for 30; clindamycin HCl 300 mg: $79.99 for 30; clindamycin HCl 150 mg: $24.99 for 30; sulfamethoxazole-TMP DS: $4 for 20; doxycycline hyclate 100 mg: $4 for 20; minocycline HCl 100 mg: $23 for 30

Dermatitis (contact, eczema or dermatitis)	Triamcinolone, clobetasol, prednisone[i]	Allergic contact dermatitis (ACD)[l] Identify the cause. Severe ACD of the hands: 3-week course of topical corticosteroid class 1. Intertriginous ACD: topical corticosteroid from class 6 or 7. Acute severe ACD such as to poison ivy may need oral corticosteroids for 2 weeks. Irritant contact dermatitis (ICD)[j] Avoid irritant, use gloves or other protective equipment, use ointments, creams, emollients.	Clobetasol proprionate 0.05% cream (class 1): $10.19 for 15 g; betamethasone diproprionate 0.05% cream (class 1): $4 for 15, 45 g; hydrocortisone 2.5% cream (class 7): $4 for 30 g; prednisone 5 mg: $9.99 for 150
Erythema multiforme	Topical steroids, oral antihistamines, prednisone, acyclovir[k]	Recent or coexistent herpes simplex virus infection: oral acyclovir may help.[k] Recurrent: Acyclovir 400 mg twice daily[k] Many lesions: May use prednisone 40 mg to 80 mg daily for 1 to 2 weeks and then rapidly taper.[k] Oral involvement: Mouthwashes with anesthetic and antiseptic compounds may help relieve symptoms.[l]	Acyclovir 400 mg: $28.99 for 60; acyclovir 200 mg: $4 for 30; loratadine 10 mg: $4 for 30; triamcinolone 0.1% cream: $4 for 15 g, 80 g; hydrocortisone 2.5% cream: $4 for 30 g; prednisone 5 mg: $9.99 for 150
Folliculitis	Topical benzoyl peroxide, topical antibiotics (such as clindamycin), oral antibiotics[m]	Superficial recurrent uncomplicated: antibacterial soaps Refractory or deep with suspected infectious cause: topical and/or oral antibiotics that cover gram-positive bacteria[n]	10% benzoyl peroxide wash: $4.80 for 6 oz; clindamycin phosphate 1% solution: $13.99 for 30 mL; cephalexin 250 mg: $4 for 28
Hyperpigmentation	Hydroquinone, Tri-Luma (fluocinolone acetonide 0.01%, hydroquinone 4%, tretinoin 0.05%)[o]	Epidermal component of postinflammatory hyperpigmentation: hydroquinone 2% to 5% lotion or cream twice daily for weeks to months Postinflammatory hyperpigmentation: Tri-Luma at night, sunscreen of SPF 30 during the day[o]	Hydroquinone 4%: $39.99 for 28.35 g; Tri-Luma: $121.41 for 30 g
Impetigo	Cephalexin, dicloxacillin, clindamycin, amoxicillin-clavulanate, mupirocin ointment[g]	Mupirocin ointment apply to lesions 3 times daily (limited number of lesions); dicloxicillin 250 mg 4 times daily for about 7 days; cephalexin 250 mg 4 times daily for about 7 days; clindamycin 300 to 400 mg 3 times daily for about 7 days; amoxicillin-clavulanate 875/125 mg twice daily for about 7 days[g]	Mupirocin 2% ointment: $34.99 for 22 g; cephalexin 250 mg: $4 for 28; clindamycin HCl 300 mg: $79.99 for 30; dicloxicillin sodium 500 mg: $18.99 for 30; amoxicillin-clavulanate: 875/125 mg $76.99 for 20
Keratosis pilaris	Ammonium lactate cream, tretinoin 0.025 to 0.1% cream, urea cream 20%, salicylic acid 6%, triamcinolone acetonide 0.1% cream[p]	Tretinoin 0.025% apply at night or every other day, increase concentration as tolerated, decrease frequency if irritation results; ammonium lactate cream 2 to 3 times daily; salicylic acid 6% 1 to 2 times daily; urea cream 20% 2 to 3 times daily; triamcinolone 0.1% cream 1 to 2 times daily until inflammation improves.[p]	Amlactin 12% lotion: $14.99 8 oz; tretinoin 0.025% cream: $35.09 for 20 g; salicylic acid 6% cream (Salex): $138.52 for 400 g; urea 20% cream (Carmol 20): $10.74 for 85 g; triamcinolone 0.1% cream: $4 for 15 g, 80 g
Lip erosions	Dependent on cause of erosion[d]	If suspicious for cancer: biopsy or refer; if suspicious for herpes labialis, treat with acyclovir.[d]	

(*Continued*)

TABLE 1. (*Continued*)

	Medications	Recommendations	Cost
Melasma	Sunscreen, hydroquinone 4% cream, tretinoin 0.1% cream, Tri-Luma[q]	Sunscreen and sun avoidance[q]; hydroquinone 4% twice daily has been recommended[q]; azelaic acid twice daily, minimum of 2 to 3 months[q] Author note: azelaic acid is pregnancy category B, whereas hydroquinone and tretinoin are category C. Tri-Luma at night, protective clothing and sunscreen with SPF 30 during the day[o]	Hydroquinone 4%: $39.99 for 28.35 g; azelex (azelaic acid 20%): $73.99 for 30 g; tretinoin 0.1% cream: $46.19 for 20 g
Nevus, benign		Can be removed if there is concern about the biologic potential[r]	
Onychomycosis	Oral terbinafine[s,t]	Toenail: Terbinafine 250 mg daily for 12 weeks[t]; fingernail: terbinafine 250 mg daily for 6 weeks[t] Author note: Prescribing information notes that terbinafine is not recommended in patients with liver disease and that pretreatment levels of ALT and AST tests should be performed	Terbinafine 250 mg, 30 tablets for $4
Pityriasis versicolor	Selenium sulfide, zinc pyrithione, ketoconazole, fluconazole[t]	Selenium sulfide suspension, apply and leave on 5 to10 minutes before rinsing, continue for 7 to 10 days; zinc pyrithione, apply and leave on 5 minutes, continue for 2 weeks; ketoconazole 2% shampoo, apply and leave on overnight once or apply each day for 3 days; fluconazole 400 mg once; if repeated in a week with 400 mg or 200 mg may achieve higher cure rate.[t]	Selenium sulfide, 2.5% lotion: $4 for 120 mL; Head and Shoulders shampoo (Pyrithione zinc 1%): $6.29 for 14.2 oz; ketoconazole 2% shampoo: $27.53 for 120 mL; fluconazole 150 mg: $4 for 1
Polymorphous light eruption	Sunscreen, hydroxychloroquine, prednisone[u]	Sun avoidance, protective clothing, sunscreen; hydroxychloroquine sulfate 200 mg to 400 mg daily in divided doses; prednisone 0.05 to 2 mg/kg/d divided into 2 times daily or 4 times daily, taper over 1 to 2 week period as symptoms improve[u]	Hydroxychloroquine sulfate 200 mg: $35.00 for 60; prednisone 5 mg: $9.99 for 150
Psoriasis	Topical corticosteroids, calcipotriene[v]	Mild to moderate[v]: Potent topical corticosteroids twice daily to localized psoriasis. Superpotent agents to limited areas then used intermittently or stagged once desired result is seen; calcipotriene twice daily. Author note: For severe or widespread disease, especially if psoriatic arthritis is present, consider referral for systemic treatment.	Betamethasone diproprionate 0.05% cream, $4 for 15, 45 g; fluocinonide 0.05% cream: $4 for 15, 30 g; calcipotriene 0.005% cream: $210.91 for 60 g
Scabies	Permethrin 5% cream, precipitated sulfur 6% in petrolatum or water-washable base[w]	Permethrin 5%: Apply from the chin down and wash off after 8 to 12 hours. Repeat treatment in 1 week if evidence of treatment failure is noted. Has been safely used in patients 2 months old. Precipitated sulfur 6%: Is used in infants less than 2 months and pregnant and nursing women. Put in petrolatum or water-washable base and apply 3 nights then wash 24 hours after third application. Has resulted in death and toxicity in infants. All close contacts should be treated. Clothes should be washed and towels and linens changed. Pruritus related to sensitization can be treated with a topical corticosteroid.[w]	Permethrin 5% cream: $19.80 for 60 g; triamcinolone 0.1% cream: $4 for 15 g, 80 g
Seborrheic keratosis	Ammonium-lactate lotion 12%[x,y]	Ammonium-lactate lotion 12% twice a day for 1 to 2 months; liquid nitrogen 15 to 20 seconds; curettage[y]	Amlactin 12% lotion: $14.99 for 8 oz

Tinea	Oral terbinafine, terbinafine 1% cream, ketoconazole 2% cream, clotrimazole 1% cream, miconazole 2% cream, naftine 1% cream, oral fluconazole[z]	Topical[z] Tinea corporis, tinea cruris, tinea pedis: ketoconazole cream 2% 1 to 2 times daily 2 to 4 weeks, clotrimazole 1% cream twice daily 2 to 6 weeks, naftine 1% cream daily 2 to 4 weeks Tinea corporis, tinea cruris: terbinafine 1% cream daily 1 to 4 weeks Tinea pedis: terbinafine 1% cream twice daily 1 to 4 weeks Prophylaxis[t] Talc or antifungal powder to interdigital or intertriginous areas after bathing Oral[z] Tinea corporis, tinea cruris: terbinafine 250 mg daily 2 to 4 weeks, fluconazole 150 mg weekly 2 to 4 weeks Tinea pedis: terbinafine 250 mg daily 2 to 6 weeks, fluconazole 150 mg weekly up to 6 weeks Tinea capitis: terbinafine 250 mg daily 4 weeks	Ketoconazole 2% cream: $14.99 for 15 g; clotrimazole 1% cream: $7.99 for 30 g; naftine 1% cream: $57.28 for 30 g; zeasorb-AF: $8.99 for 70 g; fluconazole 150 mg: $4 for 1 tablet; terbinafine 250 mg: $4 for 30 tablets
Warts	Salicylic acid 5 to 20%[aa]	Wash, rub with abrasive surface, apply keratolytic, repeat nightly[aa]	Salicylic acid 17%: $7.99 for 9 mL
Traumatic lesion	Topical antibiotic ointment, petrolatum[d]	Wash regularly and place antibiotic or petrolatum ointment under bandage. If becomes infected and not responding to topical antibiotic, may need oral antibiotic.[d]	Polysporin ointment: $9.89 for 28 g
Traumatic nail dystrophy		Avoidance of trauma[d]	

[a]Drug costs were found at www.drugstore.com. All drugs costing $4 were found at both www.walmart.com and www.target.com.
[b]Data from LaFleur et al.[10]
[c]Data from Strauss et al.[11]
[d]Personal recommendation by one of the authors (MRH).
[e]Data from Batra.[12]
[f]Data from Wenner.[13]
[g]Data from Stevens et al.[14]
[h]Data from Curtis.[15]
[i]Data from Hogan.[16]
[j]Data from Cohen and Bassiri-Tehrani.[17]
[k]Data from Lamoreux et al.[18]
[l]Data from Al-Johani et al.[19]
[m]Data from Kelly.[20]
[n]Data from Satter and Cyr.[21]
[o]Data from Patel.[22]
[p]Data from Crowe and Escobar.[23]
[q]Data from Gupta et al.[24]
[r]Data from McCalmont.[25]
[s]Data from Crawford et al.[26]
[t]Data from Choi.[27]
[u]Data from Scheinfeld and Shirin.[28]
[v]Data from Sobell and Geist.[29]
[w]Data from Bogle.[30]
[x]Data from Klaus et al.[31]
[y]Data from Bogle.[32]
[z]Data from Naradzay and Rubeiz.[33]
[aa]Data from Yelverton.[34]